

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION FOR LETTERS PATENT

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TARGETED MARKETING AND PURCHASE
BEHAVIOR MONITORING SYSTEM

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INS 01
1 TECHNICAL FIELD

2 The invention relates to point of sale marketing and purchase
3 behavior monitoring.

4
5 BACKGROUND OF THE INVENTION

6 It is known to provide coupons to consumers in order to attempt
7 to influence their purchasing behavior, for example to entice them to
8 try a new product. Such coupons are typically made available to the
9 general public by mailing coupon packages to large numbers of people,
10 or by including coupons in newspapers.

11 A problem with using such coupons is that there is a possibility
12 of fraudulent use. It may be possible for a retailer to receive cash for
13 coupons even though they did not sell a manufacturer's product. It
14 may be possible for a consumer to exceed discount limitations per
15 consumer by shopping at multiple different stores. A cashier may not
16 be able to carefully follow the rules associated with a coupon, such as
17 rules requiring a purchaser to buy a certain quantity of the product to
18 be eligible for the discount.

19 Another problem with using coupons or price discounting is an
20 inability to target a specific segment of the market. Instead, the
21 coupons or discounts are provided to a large number of consumers,
22 many of whom have no interest whatsoever in the particular type of
23 product. For example, consumers who do not own pets would have no
24 interest in pet food coupons or discounts; consumers who do not have

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1 a baby would not be interested in coupons or discounts for baby food
2 or items; vegetarians would not be interested in coupons or discounts
3 for meat, etc. Thus, a great quantity of advertising is wasted on
4 people who have no interest in the items being offered.

5 Another disadvantage of the current coupon system is the great
6 expense in having a clearing house through which coupons are physically
7 delivered for redemption. Associated therewith are handling costs
8 incurred by the national store, clearinghouse, and manufacturer. These
9 costs are typically borne by the manufacturer or other distributor of the
10 product.

11 Further, there are circumstances in which a retailer or
12 manufacturer would only be interested in offering coupons to certain
13 consumers, such as to reward repeat purchasers or quantity purchasers,
14 or to entice consumers of competitors products to switch brands. The
15 retailer or manufacturer may have a limited budget and may only be
16 interested in providing coupons to consumers who purchase goods of a
17 certain type, or in a certain quantity. This is difficult or impossible
18 using most or all prior systems.

19 It is also known to generate and sell mailing lists of consumers
20 who have certain tendencies or who purchase certain items. People
21 who purchase items by mail order quickly find themselves receiving
22 catalogs and information from other retailers who sell similar or related
23 products. Mailing lists are valuable because they provide useful
24 information about consumers, and permit targeted marketing. It would

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1 be valuable to be able to collect information about buying habits of
2 particular individuals other than just those who purchase through mail
3 order services.

4 U.S. Patent No. 4,882,675 (incorporated by reference) discloses a
5 paperless coupon system. Consumers each have a card having thereon
6 a UPC code. The consumers access a terminal and make selections
7 from possible available coupons prior to beginning shopping. A
8 shopping list of coupons is then presented to the consumer. There is
9 a link to check-out stations, and discounts selected by the consumer are
10 subtracted from the consumers total bill. Optionally, data regarding the
11 consumers purchases is captured.

12 U.S. Patent No. 4,723,212 (incorporated by reference) discloses a
13 system for printing coupons when a consumer purchases a competitor's
14 product.

15 U.S. Patent No. 4,674,041 (incorporated by reference) and
16 WO85/01373 disclose systems including terminals which receive magnetic
17 cards, and which dispense coupons available to a particular consumer.
18 The terminals communicate with a host computer, and the system
19 provides for overall limits on a discount throughout the entire terminal
20 system so that a manufacturer can put a maximum cap or limit on a
21 promotion for the entire terminal system. Coupons per store can be
22 limited as well.

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1 U.S. Patent No. 4,412,631 (incorporated by reference) discloses
2 dispensed cards which are used for imprinting onto coupons. This
3 reduces the opportunity for fraud.

4 U.S. Patent No. 4,124,109 discloses a coupon dispenser which
5 receives a card having a magnetic strip, which card includes indicia
6 indicating the last time it was used.

7 U.S. Patent Nos. 3,959,624 (incorporated by reference) discloses
8 coupons having UPC bar codes thereon. The UPCs on coupons
9 presented at check-out time must match UPCs for products purchased
10 before discounts will be applied to a consumer's bill. Similarly, U.S.
11 Patent No. 4,554,446 (incorporated by reference) discloses scannable
12 coupons.

13 A system including a supervisory computer communicating with
14 store level computers, and providing for targeted special offers was
15 installed for experimental testing in a joint development arrangement in
16 June, 1994.

17
18 **BRIEF DESCRIPTION OF THE DRAWINGS**

19 Preferred embodiments of the invention are described below with
20 reference to the accompanying drawings, which are briefly described
21 below.

22 FIG. 1 is a block diagram of a system embodying the invention.

23 FIGS. 2-3 are flow charts illustrating store level special offer
24 (promotional) staging.

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1 FIG. 4 is a flow chart illustrating a promotion set up at a
2 check-out register.

3 FIG. 5 is a flow chart illustrating identifying customers qualifying
4 for special offers.

5 FIGS. 6-10 are flow charts illustrating activity at a kiosk which
6 a customer uses to obtain a list of special offers.

7 FIG. 11 is a flow chart illustrating processing that takes place at
8 a store level computer when a check-out sends a message to the store
9 level computer.

10 FIGS. 12-14 are flow charts illustrating transactional analysis that
11 takes place at a check-out (point of sale terminal).

12 FIGS. 15-17 are flow charts illustrating updating of database
13 statistics.

14 FIG. 18 is a flow chart illustrating file transfer to a home store.

15 FIG. 19 is a flow chart illustrating remote transaction analysis.

16 FIG. 20 is a flow chart illustrating deletion of expired special
17 offers.

18 FIG. 21 is a block diagram illustrating hardware components and
19 cabling for a store employing NCR (trademark) check-outs.

20 FIG. 22 is a block diagram illustrating hardware components and
21 cabling for a store employing IBM (trademark) check-outs.
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23
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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

This disclosure of the invention is submitted in furtherance of the constitutional purposes of the U.S. Patent Laws "to promote the progress of science and useful arts" (Article 1, Section 8).

The invention provides a paperless coupon system which tracks consumer purchasing behavior. The system presents special offers (promotions) to customers. The special offers include customized targeted offers for specific customers. The invention allows manufacturers to select which consumers obtain discounts, and how big of a discount.

FIG. 1 shows a system 10 embodying the invention. The system 10 includes a plurality of store level computers or in store processors 12. One store level computer 12 is included in each of various stores, shops, or retail outlets 14. As all the stores 14 include equipment that operates in substantially a similar manner, only one store 14 will be described.

Each computer 12 includes a database containing customer account information, including information regarding purchases made by individual customers. Each computer 12 further includes a database of special offers including customized targeted offers to be made to selected customer accounts on the basis of targeted offer targeting parameters. While various other types of computers can be employed, in the illustrated embodiment the computer 12 is a UNIX machine.

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1 in making special offers. The manufacturers may wish to make special
2 offers to all customers (broadcast special offers), or only to customers
3 who meet certain criteria (targeted offers). For example, the
4 manufacturer may wish to offer discounts of varying degrees to
5 customers who have not settled on a brand and frequently switch
6 brands. The amount of discount may vary depending on the quantity
7 of that category of product that the customer purchases. Similarly, a
8 manufacturer may wish to offer discounts of varying degrees to loyal
9 customers who mostly purchase the manufacturer's products, to reward
10 loyal customers. Or a manufacturer trying to gain market share may
11 only wish to provide discounts to loyal customers of a competitor, or
12 may decide to offer higher discounts to loyal customers of a competitor
13 than to switchers.

14 Thus, the targeting parameters may include whether the customer
15 is a switcher (e.g., a customer who purchases a certain brand of
16 product sometimes, and other brands of the same category of product
17 other times). A switcher may be defined as a customer who purchases
18 a certain brand of product a certain percentage of the time, such as
19 40% of the time. The targeting parameters may include whether the
20 customer is a loyal (e.g., a customer who purchases a certain brand of
21 product most of the time, and other brands of the same category of
22 product other times). A loyal customer may be defined as a customer
23 who purchases a certain brand of product a certain percentage of the
24 time, such as 80% of the time. The targeting parameters may include

1 quantity parameters. For example, heavy, moderate, light, or never
2 quantities parameters may be established.

3 The system 10 further includes a plurality of cards 22. Each card
4 has thereon machine readable information for associating the card with
5 particular customer and customer account, and with a particular store
6 in the chain. In the illustrated embodiment, the card 22 has thereon
7 a UPC code 24. The UPC code identifies the customer and identifies
8 the customer's home store. Every customer has a home store where
9 they set up their account, and where some of their records relating to
10 their purchase behavior are kept. In alternative embodiments, the
11 machine readable information of the card 22 is contained in a magnetic
12 strip, or the card 22 is a smart card. Any other suitable means of
13 storing information in a card can be employed. Similarly, any other
14 means of identifying a customer can be employed instead of the cards
15 and the card readers described below (e.g., passwords, fingerprint scans,
16 retinal scans, etc. are employed in alternative embodiments).

17 At least one kiosk 26 is placed in each store 14. The kiosk 26
18 is a booth or housing. Preferably, at least one kiosk 26 is located
19 near the entrance of the store 14. One or more additional kiosks can
20 be located in other parts of the store frequented by customers. The
21 system 10 further comprises a customer interface 28 housed in each
22 kiosk 26 and in communication with the store level computer 12
23 associated with the store in which the kiosk 26 is located. In the
24 illustrated embodiment, the customer interface comprises a card

1 reader 28 including means for reading the machine readable information
 2 on the card, for sending information from the card to the store level
 3 computer 12 of the store where the kiosk is located. In the illustrated
 4 embodiment, the customer interface comprises a dumb terminal 30
 5 connecting the card reader 28 to the store level computer 12. Other
 6 customer interfaces can be employed, such as interactive terminals, touch
 7 screen interfaces, etc.

8 The kiosk 26 also houses an offer communicator (offer
 9 communicator means) 32 for communicating respective individualized lists
 10 of special offers to customers who access the customer interface. While
 11 various offer communicators could be employed, in the illustrated
 12 embodiment the offer communicator comprises a printer. The printer
 13 32 is preferably a high speed printer, such as a thermal printer, so as
 14 to enable quick processing of customers at the kiosk 26 to keep lines
 15 at the kiosk 26 down to a minimum. In one embodiment, the printer
 16 32 prints at least 500 lines per minute. More particularly, the printer
 17 32 is a thermal strip printer which prints 600 lines per minute. Other
 18 high speed printers can be employed.

19 The kiosks 26 can also be used by customers to check prices of
 20 products. For example, some state laws require that bar code readers
 21 be distributed throughout a store so that customers can scan bar codes
 22 on products to check prices. The kiosks 26 are capable of being used
 23 for this purpose.
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The system 10 further comprises one or more check-outs or point-of-sale terminals 34 in each store. These are spaced apart from the kiosks 26, which are preferably located in a different area of the store. The check-outs 34 in a store are in communication with the store level computer 12 associated with the same store. The check-outs 34 include readers which read the cards 22 in addition to products. More particularly, in the illustrated embodiment, the check-outs 34 include bar code readers which read UPC codes on the products, as well as UPC codes 24 on the cards 22.

In operation, a customer sets up an account with a store and receives one of the cards 22. Then, whenever the customer goes shopping, he or she goes to one of the kiosks before beginning shopping and presents the card 22 to the customer interface 28. The store level computer 12 includes means for accessing information about the special offers available to the customer associated with the card, and generates a customized list of special offers available to that particular customer. More particularly, the computer 12 determines what special offers are available to this customer, and sends a list of special offers to the offer communicator 32. The customer then has a shopping list of special offers to use while shopping. The customer does not engage in any selection process, but instead is quickly processed at the kiosk. The customer then has a limited time, e.g. 3 hours, to take advantage of the special offers before they expire.

The first few times the customer uses the card 22, the computer 12 will have little information about the customer's buying habits. Therefore, the special offers available to that customer may not contain many targeted special offers. To keep the customer interested in using the card, while purchasing behavior information is being obtained, the customer will be given broadcast special offers, which are special offers available to everyone (as opposed to targeted special offers). In addition, the customer may be entitled to a frequent shopper plan (similar to frequent flyer plans) or to a lottery if he or she uses the card 22. The frequent shopper plan awards points based on amount of use of the card 22 or based on amounts spent in the store. A lottery number can be printed on the shopping list by the printer 32, for later comparison by the shopper with a list of randomly selected winners, or the shopping list can include an indication as to whether or not the customer is a winner. The prizes for the winner of the lottery can include bonus frequent shopper points, product discounts, cash awards, etc.

In one embodiment, the total number of listed special offers (including both broadcast special offers and targeted special offers) is the same for each customer. A predetermined number of special offers ("slots") thus appears on a customer's shopping list, and the predetermined number is the same for each customer. In one embodiment, the predetermined number of special offers are the highest value special offers available to the particular customer (e.g., highest

value calculated on the basis of percentage reduction in price). The highest value special offers will typically be targeted special offers, and the remaining of the predetermined number will be filled using broadcast special offers. However, it is possible that some broadcast special offers will be more valuable than targeted special offers, and it may thus be possible for the predetermined number to exclude a targeted special offer but include a broadcast special offer. It is also possible for a certain number of "slots" to be reserved for offers from specific promotion sources; e.g., the supervisory computer 16, the manager of the in-store computer 14, the chain management of the in-store computer 14, or the primary grocery wholesaler to the store. In one embodiment, 50% of the "slots" are reserved for offers received from the supervisory computer 16 and 50% of the slots are reserved for offers received from the primary wholesaler to the store.

After the customer finishes shopping, the customer presents his or her card 22 to the check-out 34, where the card 22 is scanned before or while purchases are rung up. The system 10 includes means for associating a purchased product with a customer account if one of the cards 22 is scanned by the bar code reader 36 in sequence with scanning of products. More particularly, a list of all products for which special offers exist for at least one customer is downloaded from the store level computer to the check-out 34 at appropriate times, after special offer programs are initiated. The check-out 34 then has a list of all products for which discounts may be available to certain

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customers. If a customer purchases a product which is included in this list, the check-out 34 communicates with the store level computer 12 to determine if a special offer is available to the particular customer whose card 22 was scanned by the check-out 34 in sequence with the products, and to determine the value of the special offer for this customer. The check-out 34 applies any special offers available to that customer to the customer's total if the customer purchased products for which special offers were available to the customer. In one embodiment, if a product that is currently on promotion to at least one customer is scanned at the check-out 34 before the customer's card 22 is scanned, the check-out register 34 communicates the purchase to the store level computer 12 but does not necessarily wait for a response from the store level computer 12. If or when the customer card 22 is finally scanned at the check-out register 34 as part of the shopping trip, the check-out 34 communicates the card number of the customer card 22 to the store level computer 12. The store level computer 12 then communicates to the check-out register 34 each discount that the consumer qualified for because of the product purchases made in this shopping trip prior to the scan of the customer card 22. Subsequent discounts are then received by the check-out 34 immediately following the scan of a qualifying product, as previously presented.

Special offers that were accepted by the customer, and that are restricted to a certain quantity of product, will not be available to the customer the next time the customer accesses the kiosk 26 if the

quantity limit has been reached. Thus, double couponing (where a customer uses the same coupon in different stores to avoid quantity limits) is avoided. The check-out sends to the computer 12 information regarding all purchases made by the customer.

Optionally, members of a household could be treated as a single customer, so that they can take advantage of combined purchasing power. The members of the household would then all have cards associating them with the same customer account in the computer 12. The computer 12 identifies which customers should be treated as a household, such as if two customers have the same address. Thus, the two customers that should belong to the same household can optionally be given the option of being treated as a household. Members of a same household may opt out of being treated as a single household. For example, college students living at home may not be interested in targeted special offers that are made to the rest of the household. If the household has a baby, the college students may not be interested in obtaining targeted special offers relating to baby food or supplies.

The system 10 maintains and may communicate to each customer who uses a card 22 a running total of savings realized by that customer since the customer started using the card 22. In one embodiment, the running total of savings is communicated to the customer by the check-out 34, such as by printing the running total on the customer's receipt.

When targeted special offers are set up, the administrators of the supervisory computer 16 communicate with manufacturers, and determine who the manufacturers want to target. The manufacturers provide targeted offer targeting parameters in the form of criteria a customer must meet in order to be eligible for a particular targeted offer. Before the targeted special offers go into effect, a staging operation takes place during which either the supervisory computer 16 or the store level computer 12 determines which customers in the customer account databases meet the criteria. Each special offer is typically set, using the supervisory computer 16, to automatically expire on a certain date, after which date the special offer will no longer be printed on the shopping lists.

The system 10 further comprises means for defining, using the supervisory computer, categories of products, and means for providing category exclusivity, wherein the system only permits special offers for one brand of product per category. Each product falls within a category, such as meat, beverages, baby supplies, etc. When targeted special offers are set up, the supervisory computer 16 will not allow a targeted special offer to be set up for a store if there is a special offer for a competitor's product of the same category available during the same time frame at the same store.

If a customer uses his or her card 22 at a customer interface 28 in a store other than their home store, the store level computer 12 communicates with the customer's home store and the customer's

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1 account is accessed even though the customer is not in his or her
2 home store. Thus, the customer can obtain a list of special offers even
3 when shopping at another store of a chain of stores. In one
4 embodiment, the customer can obtain a list of special offers even when
5 presenting a card 22 from a competitor's chain of stores. The
6 competitor's chain of stores will automatically set up a new account and
7 at least provide broadcast special offers to the customer while purchase
8 behavior information is collected in a store level computer of the
9 competitor's chain of stores.

10 The system further comprises means for preventing a special offer
11 from being communicated by the offer communicator 32 if the product
12 associated with the special offer is out of stock. More particularly, if
13 a store manager learns that a certain product is out of stock or low
14 of stock, he or she can access the store level computer 12 and prevent
15 the offer communicators 32 in his or her store from printing any more
16 special offers for the out of stock product.

17 The system 10 further comprises means for automatically increasing
18 the value of a special offer available to a customer for a product if
19 the customer previously did not purchase that product after one of the
20 offer communicators communicated a discount for that product to the
21 customer, and means for communicating the increased value special offer
22 to the customer when the customer subsequently presents the customer's
23 card to one of the customer interfaces. A manufacturer may wish to
24 increase a targeted special offer available to a customer if the customer

The system 10 provides many advantages. The likelihood of special offers being accepted is higher than if paper coupons are used. There is no need to select, clip, and carry coupons. The problem of coupon fraud is reduced. Control over timing of special offers is increased. Manufacturers can be provided with category exclusivity. The possibility of double couponing is reduced. The distribution of special offers within a store is capable of being limited. Statistical analysis of customer behavior can be performed. Because of the ability to narrowly target customers, manufacturers are more likely to provide increased value special offers to customers, and this increases the likelihood of acceptance as compared to an untargeted approach. In an untargeted system, a loyal customer of a certain brand may receive special offers for the brand that the loyal customer would buy anyway. In applicant's system, the loyal customer would only receive the special offer if the manufacturer so desires.

Various detailed flow charts are provided which illustrate logic employed in one embodiment of the invention. This application is intended to cover broader aspects of the invention. The description of the flow charts is provided merely to better enable one of ordinary skill in the art to implement the invention without undue experimentation.

FIGS. 2-3 are flow charts illustrating store level 14 promotional staging. This staging operation is used to tell the system 10 which products to discount. Category exclusivity is provided. Automatic increasing of the value of special offers, if customers reject special

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offers is set up during the store level staging. Any of the computer systems (14, 20, or 16) containing the customer purchase history may be used to target recipients of a promotion. If targeting takes place anywhere other than on a store level computer, either the list of targeted customers is transmitted to each appropriate store level computer, or the targeting process itself must be repeated at each store level computer. The staging of promotional products at the check-out 34 takes place only at the store level computers that will support the promotion.

A special status flag (stat) is used to indicate the status of a particular promotion at a particular point in time. This status flag determines what action, if any, is to be taken for a given promotion. In the embodiment represented by FIGS. 2 and 3, the following meaning of the status flag values are used:

<u>Status</u> <u>Value</u>	<u>Meaning</u>
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0	The promotion is still in the configuration process, and is not to be staged or targeted.
1	The promotion is fully defined, and will be staged at the check-out 34 system when the promotion becomes effective.
2	The promotion has been staged at the check-out 34, and is now ready to be targeted to the households that qualify for the promotion.
3	The promotion is fully staged; it may appear at the offer communicator 32 or the kiosks 26, and may be discounted at the check-out 34. The promotion will normally remain active until its expiration.

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1 At step 62, a determination is made whether the promotion
2 should be staged at the check-out 34. If so, the system proceeds to
3 step 64; if not, the system proceeds to step 70.

4 At step 64, the special offer is set up at the check-out 34 so
5 that the check-out 34 is given an indication that it should look up a
6 special offer when a customer buys a product bearing this UPC symbol.

7 At step 66, a flag ("stat = 2") is set for the special offer. After
8 performing 66, the system proceeds to step 50 where the next special
9 offer is read.

10 At step 70, the determination is made whether the promotion has
11 been set up (staged) at the check-out 34. If so, the system proceeds
12 to step 50, where the next promotion is read; if not, the system
13 proceeds to step 72.

14 At step 72, the determination is made whether the promotion is
15 fully active (it is staged at the check-out 34 and has been targeted to
16 qualifying households). If so, the system proceeds to step 74; if not,
17 the system proceeds to step 76.

18 At step 74, the special offer is set up at the check-out 34 again,
19 just in case the check-out 34 set-up was lost. After performing step
20 74, the system proceeds to step 50, where the next promotion is read.

21 At step 76, a determination is made whether the promotion has
22 just been de-staged at the check-out 34. If so, the system proceeds to
23 step 78; if not, the system proceeds to step 50.

24

At step 78, a flag ("stat = 5") is set for this special offer, to indicate that the promotion is now fully de-activated. After performing step 78, the system proceeds to step 50.

FIG. 4 is a flow chart illustrating a promotion set up at a check-out register. When a special offer goes into effect, a flag is sent to the check-out 34 that indicates that the product is potentially discounted.

At step 80, the next UPC of the promotion is read, and at step 82, a share builder flag (indicating that a special offer exists for this UPC) is set at the check-out 34. The system then proceeds back to step 80.

FIG. 5 is a flow chart illustrating identifying customers qualifying for special offers. At step 84, a promotion having the flag ("stat = 2") is read. At step 88, qualifying households for this special offer are identified according to the specifications of the promotion. At step 90, the special offer is inserted into the database of special offers available to each qualifying household. After performing step 90, the system proceeds to step 84 where the next status 2 special offer is read. After all "stat = 2" special offers are read, the system proceeds to step 86 where all these status 2 special offers are updated to status 3 ("stat = 3").

FIGS. 6-10 are flow charts illustrating activity at a kiosk which a customer uses to obtain a list of special offers. The kiosk supports price look-up, wherein the kiosk can be used to scan a product to

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At step 104, the kiosk 26 displays that the UPC for this product is not on file. After performing step 104, the system proceeds to step 92.

At step 106, the description and price of the product presented to the kiosk 26 is displayed at the kiosk 26. After performing step 106, the system proceeds to step 92.

At step 108, a determination is made whether the card 22 presented to the kiosk 26 is for this store. If so, the system proceeds to step 110; if not, the system proceeds to step 112.

At step 110, a determination is made whether this card number is on file. If so, the system proceeds to step 128; if not, the system proceeds to step 114.

At step 114, a determination is made whether this store has enabled automatic adding of card numbers. If so, the system proceeds to step 116; if not, the system proceeds to step 118.

At step 116, the card number is added to the database as a new member. After performing step 116, the system proceeds to step 128.

At step 118, the kiosk 26 displays that this card number is not on file. After performing step 118, the system proceeds to step 92.

At step 112, a visitor message is displayed indicating that the customer's offers are being retrieved from the customer's home store. After performing step 112, the system proceeds to step 120.

At step 120, cross-shopping requests are issued, where the store level computer 12 of this store communicates with the home store to

1 determine what special offers are available for this visitor. After
2 performing step 120, the system proceeds to step 122 where the system
3 waits for a response. After waiting for a response, the system proceeds
4 to step 124.

5 At step 124, a determination is made whether the cross-shopping
6 request was successful. If so, the system proceeds to step 128; if not,
7 the system proceeds to step 126.

8 At step 126, the kiosk 26 displays or communicates that there are
9 no offers available. After performing step 126, the system proceeds to
10 step 92.

11 At step 128, a determination is made whether the customer's
12 offers are available for shopping. If so, the system proceeds to step
13 132; if not, the system proceeds to step 130.

14 At step 130, an error message is displayed at the kiosk 26,
15 indicating the reason for the refusal to print the offer list. After
16 performing step 130, the system proceeds to step 92.

17 At step 132, a personalized welcome message is displayed at the
18 kiosk 26. After performing step 132, the system proceeds to step 134.

19 At step 136, the next active special offer of this customer is read.
20 After performing step 136, the system proceeds to step 138. If no
21 more offers are to be presented to this customer, the system proceeds
22 to step 92.

23 At step 138, household activity for the household corresponding
24 to the card 22 which was presented to the kiosk 26 is looked up for

the promotion read at step 136. After performing step 138, the system proceeds to step 140.

At step 140, a determination is made whether activity was found for this household and for this special offer. If so, the system proceeds to step 142; if not, the system proceeds to step 146.

At step 142, a determination is made whether the purchasing activity of the household is within the limits required for this special offer. If so, the system proceeds to step 148; if not, the system proceeds to step 136.

At step 146, a determination is made whether the special offer is a targeted special offer. If so, the system proceeds to step 136; if not, the system proceeds to step 148.

At step 148, a determination is made whether the UPCs of this promotion have not yet been placed into the POS (point of sale) support table for this customer's shopping trip (i.e., is this the customer's first kiosk scan for this shopping trip?). If so (if this is the first kiosk scan for this shopping trip), the system proceeds to step 150; if not, the system proceeds to step 152.

At step 150, the special offer UPC information is inserted into a POS support table for the check-out 34, so that the store-level computer 12 knows how much of a discount is to be applied at the check-out 34 if the customer meets the purchase requirements of this promotion. After performing step 150, the system proceeds to step 152.

At step 152, this special offer is communicated to the customer by the offer communicator 32. After performing step 152, the system proceeds to step 154.

At step 154, a determination is made whether the maximum number of offers have been communicated to the customer at the offer communicator 32. If so, the system proceeds to step 108; if not, the system proceeds to step 136.

FIGS. 9 and 10 are flow charts representing the activity that takes place at the customer's home store level computer 12 when the customer scans the membership card 22 at the kiosk scanner 28 of a kiosk 26 which is not located in the customer's home store.

At step 156, a determination is made whether the card number is on file. If so, the system proceeds to step 164; if not, the system proceeds to step 158.

At step 158, a determination is made whether "Auto Add" is set (whether this store will allow card numbers to be automatically added to its database). If so, the system proceeds to step 160; if not, the system proceeds to step 162.

At step 160, this card number is added to the database. After performing step 160, the system proceeds to step 164.

At step 162, the system returns a negative response to the store level computer 12 which made the request. This process is now complete.

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At step 164, a determination is made whether the customer's offers are available for shopping. If so, the system proceeds to step 166; if not, the system proceeds to step 162.

At step 166, the next cross-shoppable active special offer is read. If no more special offers exist, the system proceeds to step 182. Otherwise, the system proceeds to step 168.

At step 168 household activity is read for this special offer. After performing step 168, the system proceeds to step 170.

At step 170, a determination is made whether household activity was found for this special offer. If so, the system proceeds to step 174; if not, the system proceeds to step 172.

At step 172, a determination is made whether the special offer is a targeted special offer. If so, the system proceeds to step 166; if not, the system proceeds to step 178.

At step 174, a determination is made whether the activity is within the limits established for this special offer. If so, the system proceeds to step 178; if not, the system proceeds to step 176.

At step 176, a determination is made whether the special offer is non-targeted. If so, the system proceeds to step 178; if not, the system proceeds to step 166.

At step 178, information about this promotion and the household activity relating to this promotion are added to the cross-shopping reply message (which will be sent back to the requesting computer in step 182). After performing step 178, the system proceeds to step 180.

At step 192, a determination is made whether the card number for the card 22 presented to the check-out 34 is on file. If so, the system proceeds to step 204; if not, the system proceeds to step 206.

At step 204, a determination is made whether the card 22 was scanned at the kiosk 26. If so, the system proceeds to step 218; if not, the system proceeds to step 206.

At step 206, a negative response is returned indicating that special offers are not available to this customer. After performing step 206, the system proceeds to step 184.

At step 218, promotion information is read from the POS support table. After performing step 218, the system proceeds to step 226.

At step 226, the next discount due to this customer is determined based upon product UPC scans which preceded the card 22 scan. After performing step 226, the system proceeds to step 234.

At step 234, a determination is made whether a discount was found. If so, the system proceeds to step 242; if not, the system proceeds to step 235.

At step 242, the UPC and discount is returned. After performing step 242, the system proceeds to step 226.

At step 235, the consumer offer status is set to "U", preventing any other activity against this consumer's offers until the entire check-out is analyzed and accounted for (FIGS. 12-17). After performing step 235, the system proceeds to step 236.

1 At step 200, a determination is made whether the card 22 was
2 successfully scanned at the check-out 34 as part of this check-out. If
3 so, the system proceeds to step 202; if not, the system proceeds to step
4 214.

5 At step 202, the consumer offer status is set to "U". After
6 performing step 202, the system proceeds to step 214.

7 At step 214, tallies are reset. After performing 214, the system
8 proceeds to step 184.

9 At step 210, a determination is made whether the transaction was
10 voided or canceled. If so, the system proceeds to step 212; if not, the
11 system proceeds to step 222.

12 At step 212, a determination is made whether the card 22 was
13 scanned at the check-out 34 as part of this check-out. If so, the
14 system proceeds to step 216; if not, the system proceeds to step 224.

15 At step 216, the consumer's offer status is set back to "I". After
16 performing step 216, the system proceeds to step 224.

17 At step 224, tallies are reset. After performing step 224, the
18 system proceeds to step 184.

19 At step 222, a determination is made whether the transaction was
20 suspended at the check-out 34. If so, the system proceeds to step 232;
21 if not, the system proceeds to step 246.

22 At step 232, all information accrued for this check-out is moved
23 into suspense. After performing step 232, the system proceeds to step
24 184.

At step 246, a determination is made whether the transaction has been resumed at the check-out 34. If so, the system proceeds to step 248; if not, the system proceeds to step 184.

At step 248, information accrued for this check-out is restored from suspense. After performing step 248, the system proceeds to step 184.

FIGS. 12-14 are flow chart illustrating transactional analysis that takes place at a check-out (point of sale terminal). A determination is made whether a household has redeemed a special offer up to the maximum quantity for which the special offer was available. If so, the household will not see that special offer again unless the manufacturer reinstates it. After a check-out transaction is completed, and a sale is closed, the shopping history of the customer is updated, to reflect all purchases made by the customer. A determination can be made as to whether the customer accepted a special offer, passed on the special offer (did not make a purchase of any product for the category), or rejected the special offer (purchased a competitor's product).

At step 250, a completed point-of-sale transaction is read from the check-out 34. After performing step 250, the system proceeds to step 252.

At step 252, a database image is made of the point-of-sale transaction. After performing step 252, the system proceeds to step 254.

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At step 254, a determination is made as to whether a card 22 was scanned at the check-out 34. If so, the system proceeds to step 258; if not, the system proceeds to step 256.

At step 256, the transaction is marked as a home non-member (in other words, this customer did not scan a card 22 at the check-out 34). After performing step 256, the system proceeds to step 282.

At step 258, the determination is made whether the card 22 that was scanned is for this store. If so, the system proceeds to step 268; if not, the system proceeds to step 260.

At step 260, a determination is made as to whether the store number on the card is a known store number. If so, the system proceeds to step 262; if not, the system proceeds to step 264.

At step 264, the transaction is marked as a transaction for a card having an unknown home store. After performing 264, the system proceeds to step 282.

At step 262, the transaction is marked as a transaction for a visitor from another home store. After performing step 262, the system proceeds to step 266.

At step 266, a determination is made whether this card number is on file as a visitor who scanned his or her card 22 at a kiosk 26. If so, the system proceeds to step 278; if not, the system proceeds to step 282.

At step 268, a determination is made whether this card number is on file as a home store customer. If so, the system proceeds to step 276. If not, the system proceeds to step 270.

At 270, a determination is made as to whether automatic addition of card numbers is set for this store. If so, the system proceeds to step 274; if not, the system proceeds to step 272.

At step 272, this transaction is marked as a transaction for a home non-member (a customer possessing a card for this store, for whom no account has yet been set up). After performing step 272 the system proceeds to step 282.

At step 274, the card number is added to the database. After performing step 274, the system proceeds to step 276.

At step 276, the transaction is marked as a transaction for a home member (a customer having this store as their home store). After performing step 276, the system proceeds to step 278.

At step 278, a determination is made whether the customer scanned his or her card 22 at both the kiosk 26 and at the check-out 34. If so, the system proceeds to step 280; if not, the system proceeds to step 282.

At step 280, the transaction is marked as a share-builder transaction (a transaction for which special offers may have been redeemed or discounted at the check-out 34). After performing step 280, the system proceeds to step 282.

At step 282, database statistics are updated (see FIGS. 15-17). After performing step 282, the system proceeds to step 284.

At step 284, a determination is made as to whether this is a share-builder transaction (see step 280 for the definition of a share builder transaction). If so, the system proceeds to step 286; if not, the system proceeds to step 288.

At step 286, the customer offer status is set to "A", to allow subsequent activity against the customer's targeted offers. After performing step 286, the system proceeds to step 288.

At step 288, a determination is made as to whether the transaction type is a visitor transaction. If so, the system proceeds to step 290; if not, this processing is completed.

At step 290, an image of the transaction is written to a "flat" file, to be sent to the customer's home store. After performing step 290, this processing is completed.

FIGS. 15-17 are flow charts illustrating updating of database statistics for a single POS transaction received from either a check-out 34 at this store or from another store (see step 290).

At step 292, the period number of this transaction is determined. After performing step 292, the system proceeds to step 294.

At step 294, daily activity statistics are updated based on this transaction's type. After performing step 294, the system proceeds to step 296.

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1 At step 296, a determination is made whether the transaction is
2 for a customer whose home store is this store. If so, the system
3 proceeds to step 298; if not, the system proceeds to step 300.

4 At step 298, household-level life-to-date statistics are updated for
5 this specific household, as identified by the card 22 scanned at the
6 check-out 34. After performing step 298, the system proceeds to step
7 300.

8 At step 300, period-based household-level statistics are updated.
9 After performing step 300, the system proceeds to step 302.

10 At step 302, a determination is made as to whether the
11 transaction type is a remote transaction (a transaction sent to this store
12 from another store, for a customer whose home store is this store).
13 If so, the system proceeds to step 306; if not, the system proceeds to
14 step 304.

15 At step 304, store-level period-based category-related statistics are
16 updated. After performing step 304, the system proceeds to step 306.

17 At step 306, period-based household-level category-related statistics
18 are updated. After performing step 306, the system proceeds to step
19 308.

20 At step 308, a determination is made as to whether the
21 transaction type is a home member, or remote transaction type. If so,
22 the system proceeds to step 310; if not, the system proceeds to step
23 312.
24

At step 328, offer statistics are updated for either the home store customer or for the visitor customer. After performing step 328, the system proceeds to step 330.

At step 330, information staged at a kiosk scan are deleted from the POS support table. After performing step 330, processing is completed.

FIG. 18 is a flow chart illustrating the file transfer of shopping trips for visitors from another home store back to their home store, for further analysis at that home store. Whether a customer scanned a card 22 at a kiosk 26 or not, the purchasing history for the customer, or the household, is updated if the customer shops at a store other than the customer's home store and scans the card 22 at a check-out 34 at that (remote) store.

At step 332, the next home store file is selected. After performing step 332, the system proceeds to step 334.

At step 334, the home store network address is determined. After performing step 334, the system proceeds to step 336.

At step 336, the file is transferred to the proper home store. After performing step 336, the system proceeds to step 332 where the next home store file is selected.

FIG. 19 is a flow chart illustrating remote transaction analysis, or the analysis of shopping trips made at another store by customers of this home store.

1 At step 338, a remote transaction file is read. If no more
2 shopping trips are in the file, processing terminates. After performing
3 step 338, the system proceeds to step 340.

4 At step 340, a determination is made as to whether the card
5 number is on file. If so, the system proceeds to step 346; if not, the
6 system proceeds to step 342.

7 At step 342, a determination is made as to whether automatic
8 addition of card number is permitted. If so, the system proceeds to
9 step 344; if not, the system proceeds to step 338.

10 At step 344, the card number is added to the database as a "new
11 member". After performing step 344, the system proceeds to step 346.

12 At step 346, the transaction is stored in the database as a remote
13 transaction shopping trip. After performing step 346, the system
14 proceeds to step 348.

15 At step 348, database statistics are updated (see FIGS. 15-17).
16 After performing step 348, the system proceeds to step 338.

17 FIG. 20 is a flow chart illustrating deletion of expired special
18 offers. Special offers are valid for a predetermined amount of time
19 after a customer presents a card 22 to the kiosk 26. If the customer
20 does not then present the card 22 to the check-out 34 within a
21 predetermined amount of time, the special offers are canceled by the
22 store level computer 12.

23 At step 350, the next household or visitor household with the flag
24 ("stat = I") and offer expiration < now is read. If no more

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1 connected to the CSU/DSU, the router 372 being connected to the
2 MAU. The MAU 370 is connected to a 4680 controller 372 and a
3 front office of the store, and the MAU 370 is connected to a 4680
4 controller 374 in the back office of the store. The 4680 controller 374
5 is connected to the store loop 376, and thus to the check-outs 34.

6 In compliance with the statute, the invention has been described
7 in language more or less specific as to structural and methodical
8 features. It is to be understood, however, that the invention is not
9 limited to the specific features shown and described, since the means
10 herein disclosed comprise preferred forms of putting the invention into
11 effect. The invention is, therefore, claimed in any of its forms or
12 modifications within the proper scope of the appended claims
13 appropriately interpreted in accordance with the doctrine of equivalents.
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